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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,098	01/20/2004	Hyeong-Rae Seon	P57021	6953

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EXAMINER

WILLIAMS, JOSEPH L

ART UNIT PAPER NUMBER

2879

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759,098

Applicant(s)

SEON ET AL.

Examiner

Joseph L. Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15 and 25 is/are allowed.
- 6) ☒ Claim(s) 1-13 and 16-23 is/are rejected.
- 7) ☒ Claim(s) 14 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed on 28 February 2006 has been entered and overcomes the rejections to the claims.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 8, 9, 11, 12, 16, 17, and 19-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (US 7,045,948).

Regarding claim 1, Lee ('948) teaches in figure 2 and the corresponding text a field emission display comprising a first substrate (110); an electron

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emission assembly (120, 130, 140, 150a) arranged on the first substrate; a second substrate (210) arranged a predetermined distance from the first substrate, the first and second substrates forming a vacuum space (no number); an illumination assembly (220, 230, 240) arranged on the second substrate, the illumination assembly being illuminated by electrons emitted from the electron emission assembly; and a mesh grid (400) arranged above the electron emission assembly.

Regarding claim 2, Lee ('948) teaches the mesh grid comprises a metal.

Regarding claim 8, Lee ('948) teaches the electron assembly comprises a cathode (120) and a gate (150) and an electron emission source (140).

Regarding claim 9, Lee ('948) teaches the gate is arranged on an upper side of the cathode.

Regarding claim 11, Kim ('083) teaches an intermediate material (402) is arranged between the electron emission assembly and the mesh grid.

Regarding claim 12, Lee ('948) teaches the intermediate material comprises an insulating material.

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Regarding claim 16, Lee ('948) teaches a method of manufacturing a field emission display, the method comprising: providing a first substrate; arranging an electron emission assembly on the first substrate; arranging a second substrate a predetermined distance from the first substrate to form a vacuum space with the first and second substrates; arranging an illumination assembly on the second substrate, and illuminating the illumination assembly with electrons emitted from the electron emission assembly; and arranging a mesh grid above the electron emission assembly.

Regarding claim 17, Lee ('948) teaches forming the mesh grid of a metal.

Regarding claim 19, Lee ('948) teaches forming a cathode and a gate and an electron emission source in the electron emission assembly.

Regarding claim 20, Lee ('948) teaches forming the gate on the upper side of the cathode.

Regarding claim 21, Lee ('948) teaches forming an intermediate material between the electron emission assembly and the mesh grid.

Regarding claim 22, Lee ('948) teaches forming the intermediate material of an insulating material.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-7, 10, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 7,045,948), in view of Higashinakagawa et al. (US 4,827,178), both of record.

Regarding claim 3, Lee ('948) teaches all of the claimed limitations except for the mesh grid comprising one of stainless steel, invar, and an iron-nickel alloy.

Further regarding claim 3, Higashinakagawa ('178) discloses, within the same field of endeavor, a cathode ray tube comprised of, in part, a shadow mask (mesh grid) comprised of an iron nickel alloy for the purpose of providing a clear, plane and easily seeable image.

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the material of the mesh grid of Higashinakagawa for the mesh grid in the display of Lee for the purpose of providing clear, plane, and easily seeable images.

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Regarding claim 4, Higashinakagawa ('178) discloses the iron-nickel alloy comprises 3 to 15% by weight of Cr, which includes the claimed range.

The reason for combining is the same as for claim 3 above.

Regarding claim 5, Higashinakagawa ('178) discloses the iron-nickel alloy comprises 30 to 45% by weight of Ni, which includes the claimed range.

The reason for combining is the same as for claim 3 above.

Regarding claim 6, Higashinakagawa ('178) discloses the iron-nickel alloy comprises 0.2 to 4% by weight of Mn, to 1% of C, and 0 to 1% of Si, which includes the claimed ranges.

The reason for combining is the same as for claim 3 above.

Regarding claim 10, Lee ('948) teaches the gate is arranged on the upper side of cathode, but not on the lower side. However, the location of the gate electrode does not appear to be a critical feature (either the upper or lower side of the cathode), and thus is an obvious choice in design.

Regarding claim 18, Lee ('948) teaches all of the claimed limitations except for the mesh grid comprising one of stainless steel, invar, and an iron-nickel alloy.

Further regarding claim 18, Higashinakagawa ('178) discloses, within the same filed of endeavor, a cathode ray tube comprised of, in part, a shadow mask

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(mesh grid) comprised of an iron nickel alloy for the purpose of providing a clear, plane and easily seeable image.

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the material of the mesh grid of Higashinakagawa for the mesh grid in the display of Lee for the purpose of providing clear, plane, and easily seeable images.

Claims 13 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 7,045,948), in view of Kamide et al. (US 6,917,155), both of record.

Regarding claims 13 and 23, Lee ('948) teaches all of the claimed limitations except for the intermediate material being made of a resistive material.

Further regarding claims 13 and 23, Kamide ('155) teaches, within the same field of endeavor, the use of a resistance layer in a field emitter for the purpose of decreasing the consumption power of the display.

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the resistive layer of Kamide in place of the insulating layer of Lee for the purpose of decreasing the consumption power of the display.

Allowable Subject Matter

3. Claims 14 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Regarding dependent claims 14 and 24, the prior art of record neither shows nor suggest a FED comprised of, in part, a focusing electrode on the mesh grid.

4. Claims 15 and 25 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggest an FED comprised of, in part, a mesh grid being bonded to the electron emission assembly by a frit, along with the rest of the limitations of the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

5. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Williams whose telephone number is (571) 272-2465. The examiner can normally be reached on M-F (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Joseph L. Williams
Primary Examiner
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